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SITE STUDY PLAN
SAAD OIL COMPANY
NASHVILLE, TENNESSEE

PROGRAM ELEMENT: NSF
EPA PROJECT NUMBER 82-131

I. INTRODUCTION

An investigation will be conducted by Ecology and Environment, Inc. (E&E), Region IV, Field Investigation Team of the Saad Site in Nashville, Tennessee. This investigation, to be conducted during the week of May 17-23, 1982, is at the request of the U.S. Environmental Protection Agency, Air and Waste Management Division.

II. SITE DESCRIPTION

The Croft farm property is a 300 acre farm in Nashville, TN that will be turned into a childrens recreation park under management of the Cumberland Museum. On the property are several springs, one of which is polluted with hydrocarbons and synethtic organic chemicals. Past sampling at this spring by Tennessee Water Quality staff has documented the presence of alkylated benzenes, 1,1-dichloroethylene, chloroform, carbon tetrachloride, and chlorobenzene. Additionally this spring is aesthetically damaged by a bloom of filementous algae of a species characterized by the state to be associated with hydrocarbon pollution. The museum and state officials desire to rid this spring of pollution to eliminate possible health risks to users of the planned park and to restore its natural appearance.

Two potential sources of pollution have been identified; the L&N railroad yard and the John P. Saad Oil Reclaimer. Both facilities are located about 0.75 miles to the west of the spring (See Figure 1). The local geology contains limestone that has karst formations and extensive fracturing. Additionally, there is a sink area common to both the L&N yard and the Saad property that has received spilled fuels and lubricants (L&N) and disposal waste chemicals (Saad). It is suspected that this sink is hydrologically connected to the Croft spring. A recent ground resistivity study by FIT supports this suspicion and installation of monitoring wells is planned for confirmation.

The Saad facility has operated since 1970 and the state estimates it has deposited about 0.75 million gallons of chemical wastes into a pond over the sink area. State analysis data shows that Saad handled some of the chemicals known to be in the contaminated spring. The pond was pumped and filled with boulders and gravel in 1979 by Saad under court order. The state is unsatisfied with this cleanup and suspects that retrievable sludges still remain.

L&N fuel handling practices have been questionable and several spills have occurred during the past decades. In 1968 L&N paid damages to the Croft farm for the spring pollution which reportedly injured cattle exposed by drinking from the spring. Diesel fuel odors at the spring have been reported. Even though L&N has recently cleaned up their yard operations, there still could exist underground pockets of fuel spilled d

in past years which continue to contaminate the spring. The monitoring well study will address this possibility.

In addition, the local area is industrial and there is a need to sample surface drainage features to determine if there are other facilities contributing to pollution of surface water that could recharge the Croft Spring.

III. OBJECTIVE

The objective of this specific investigation is to determine if waste materials disposed of on the Saad property or materials spilled by the L&N Railroad are contributing to the contamination of underlying aquifers, and the springs on the Croft farm. Additionally, a reconnaissance of the area will be made to be used in the development of a more complete area sampling plan.

IV. SCOPE

This investigation will include environmental samples collected from the eight natural springs on the Croft farm, the surface of the Saad site and the L&N Railroad wastewater treatment system. One hot sample will be collected from the waste pit on the Saad Property. All samples will be analyzed for extractable and volatile organic compounds, metals and cyanide.

V. METHODOLOGY

All sample collection, sample preservation and sample management procedures used during this study will be conducted in accordance with Water Surveillance Branch Standard Operating Procedures and Quality Assurance Manual (Draft) of EPA Region IV ESB, dated August 29, 1980. All analyses of the samples will be conducted by the EPA Region IV, Laboratory Services Branch in accordance with the Laboratory Services Branch Operations and Quality Control Manual, March, 1981.

VI. FIELD STUDIES

1. Sampling Locations

The approximate locations of the sampling points are shown on Figure 1. All of the sampling points are not shown in this figure and the exact locations of the eight springs reported to exist in the area will be located in the field.

a. The springs are located within the shaded areas on Figure 1. The locations of these springs will be recorded when the samples are collected. The sample codes will be SS-SP-(1-8) (W or S).

b. A surface sample (SS-SS-S) will be collected from the area around the waste pit on the Saad property. A concentrated sample (SS-CW-S) of the waste material will be collected after the cover material is excavated with a backhoe.

c. A water and sediment sample will be collected from the wastewater treatment pond located on the L&N Railroad property. As this pond collects rainfall runoff from the L&N site this sample will not be considered "hot". The sample codes will be SS-RR-TPW for the treated wastewater sample and SS-RR-TPS for the sediment from the treatment pond.

— L&N oil separator sample — I thought that the oil separator would be sampled

2. Personnel Requirements

This study will require a larger number of personnel than would normally be used since it involves both sampling and site reconnaissance. Additional personnel are also required to prevent cross-contamination of the spring samples by the materials on the Saad property. Personnel are as follows:

Charles Wilson - Project Officer - Team No. 1 Leader ✓
Mac Carman - Team Member

Roger Franklin - Team No. 2 Leader ✓
Chris Leggett - Team Member

Gary Clemons - Team No. 3 Leader ✓
(One person will be assigned to this team from Teams 1 and 2 when onsite operations are in progress).

3. Sample Container Requirements

Analysis	Container	Number*
Water, ext. organic	gallon, glass	16
Water, VOA	glass vial	16
Water, VOA - preserved	glass, vial	12
Water, metals	pint, glass	16
Water, cyanide	1/2 gallon, plastic	16
Soil/Sediment, organics	quart, glass	13
Soil/Sediment, VOA	8 oz. glass	15
Soil/Sediment, metals/CN	pint, plastic	13

* This number will be increased by a factor of two (2) if samples are to be spilt. Breakage allowance is included.

I really hope you don't Spill any Samples!

4. Study Schedule

May 17, 1982 - travel to Nashville, TN ✓
May 18-20, 1982 - onsite investigation
May 21, 1982 - return travel to Atlanta

5. Logistics

The sampling teams will operate out of the E & E step van and a G.S.A. four wheel drive vehicle.

6. Documentation and Chain-of-Custody

All Documentation and Chain-of-custody procedures will be according to SOP.

Not really needed - but if you include should be a complete ref to WSB SOP

7. Special Equipment

The only special equipment required for this study will be a Backhoe which will be used to excavate the soil and gravel overfill in the waste pit located on the Saad Site. Arrangements have been made for a local contractor to provide this equipment and an operator.

Cleaning of Backhoe Should be detail here! — Should

8. Shipping Material

Shipping containers and appropriate labels will be required for the concentrated sample to be shipped to N.E.I.C.

1230
5/14/82 — Telecon/Charles Wilson
FIT — following procedure will be used to clean Backhoe & IS accepted

① Steam Jenny
② Lab detergent/Tap H2O
③ Acetone Rinse
④ distilled H2O Rinse

Initial Cleanup — one Sample

Procedure OK
M. O'Sam
5/14/82

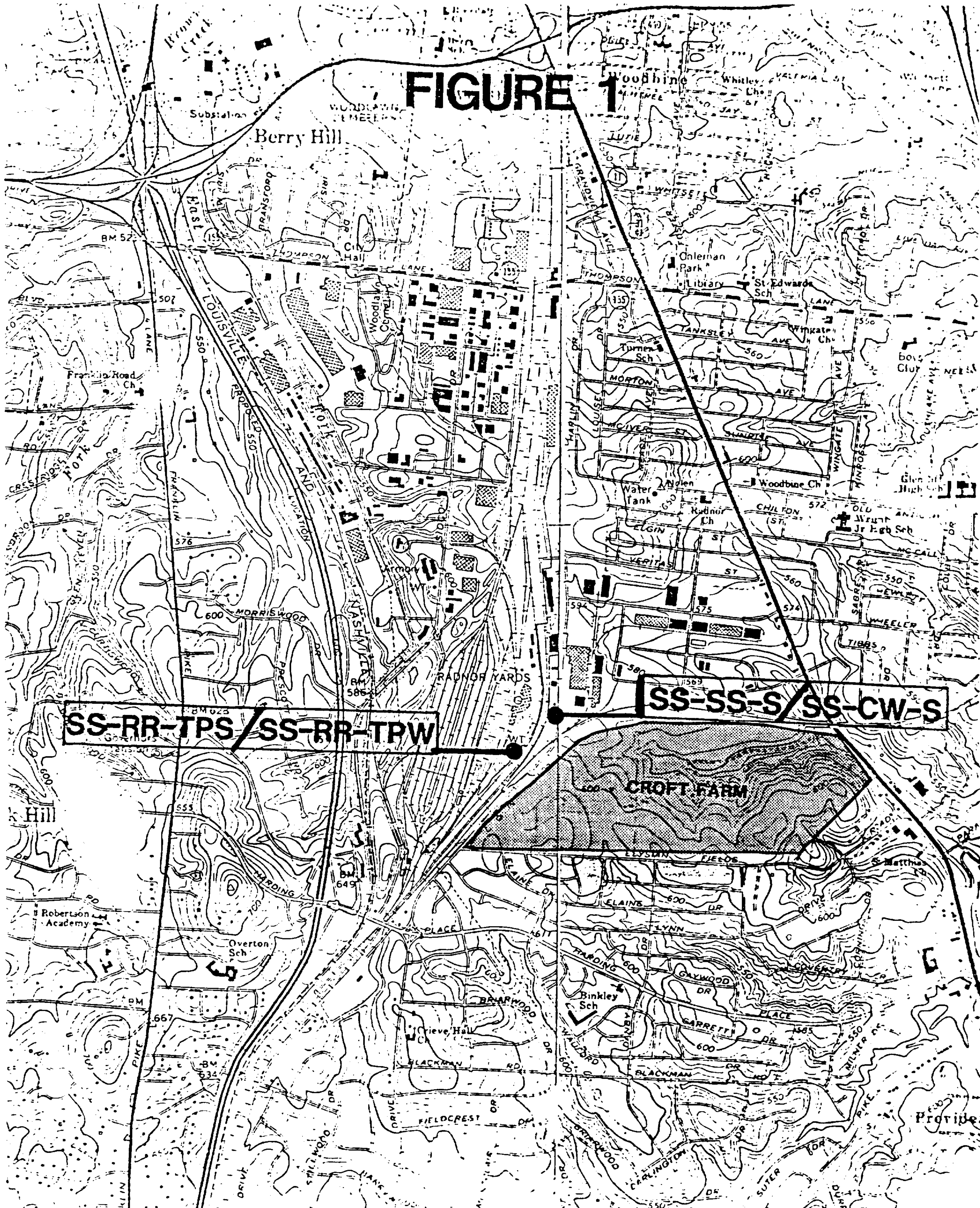
FIGURE 1
SS-RR-TPS / SS-RR-TPW
SS-SS-S / SS-CW-S
CROFT FARM
Berry Hill
RADNOR YARDS
Woodbine
City Hall
Robertson Academy
Overton Sch
Binkley Sch
Grieve Hall
Turner Sch
Radnor Ch
Woodbine Ch
Franklin Road Ch
Substation
PROPOSED LOCATION
LOUISVILLE AND NASHVILLE
THOMPSON LANE
HARDING PLACE
ELYSIAN FIELDS
BLACKMAN RD
MORRISWOOD DR
ELAINE DR
BRIARWOOD DR
FIELDCREST DR
CHILTON ST
ELGIN ST
VERITAS ST
TANKSLEY AVE
MORTON AVE
MCIVER ST
SUNDALE AVE
WINGATE AVE
GAYWOOD DR
GARRETT DR
COVENTRY DR
WHEELER
TIBBS
Water Tank
Wingate Ch
Library
St Edwards Sch
St Matthias Ch
Armory